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JOHN W. MELLOR

Dealing with the Uncertainty of Growing Food Imbalances: International Structures and National Policies

INTRODUCTION

I start with a Rawlsian (Rawls 1971) view that it is unjust and hence unacceptable that in some countries large numbers of people suffer from food intake inadequate for healthy, active lives, but in others food is stored for uneconomically long periods of time or subsidies are paid to dispose of food or to reduce production.

That the existing distribution of food is unjust is, of course, clearly indicated by the large surpluses that almost all OECD countries have and by their concern with how to dispose of that food. At the same time massive poverty exists in much of the Third World, with as many as 800 million people having an inadequate energy intake. Assuming that such a distribution of food is philosophically unacceptable, we must ask why it exists. I argue that it happens for three reasons.

First, there is a serious inhibition to redistributing income because of the effect of marginal tax rates on incentives. In many countries, perhaps all, the burdens placed on governments, whether well thought out or not, are so large that the marginal tax rates established are now generally thought to destroy incentives and hence growth. This does create a dilemma between growth and equity. One may argue, of course, that a high priority of taxation should be to redistribute food to those who have inadequate food intake. Preferences revealed in actions, which perhaps should not be dismissed as misleading, suggest otherwise.

Second, those who are taxed, generally believe that there is considerable difficulty in identifying the needy and in devising programmes that efficiently transfer resources to them. There is a related ambivalence about the interaction between short-run mitigation of poverty and the creation of conditions that eliminate poverty in the long run. While we all know there is considerable inefficiency in transferring income, it is perhaps also true that the extent of that inefficiency is exaggerated.

Third, there may be a difference between looking at a country from a Rawlsian perspective and looking at the world from that perspective. Since the distribution of income among nations is grossly uneven, it follows that redistributing food from the more well-to-do to the poorer

means the redistribution of food from wealthier countries to poorer ones. Do we think only of the probability of being poor in our own country? If so, we may feel that this probability is so low that we can dismiss it. If we take an international view instead, we would favour larger international income transfers, both for development and to increase equity.

GROWING REGIONAL FOOD IMBALANCES

Exports of food from the developed market economies to the developing countries of the Third World have grown rapidly from an annual average of about 11 million metric tons during 1976–80. By projecting production and demand, these exports reach 75 to 80 million metric tons by the year 2000. These figures, by historical standards, are extraordinary. During 1980–2 food aid comprised about 9 per cent of cereal imports into Third World countries. That is a decline from 13 per cent during 1976–8 (Paulino forthcoming; Huddleston 1984). Thus, the market has brought about a tremendous movement of food from the surplus-generating developed countries to the developing countries. Were it not for this commercial flow, food prices in developing countries would have been considerably higher. Since demand for food by the poor is relatively elastic, these commercial transfers clearly increased equity. Given this huge flow of food on commercial account, it is useful to understand the major structural changes in developing and developed countries that explain it. By understanding the structural forces we can understand that this flow is likely not only to continue but perhaps to accelerate. I will distinguish four phases in food-supply demand balance relationships (Mellor 1966; Mellor and Johnston 1984).

Phase one

In the first phase, typical of low income incipient developing countries, the labour force grows modestly and is significantly constrained by high death rates. Income per caput hardly rises at all. Thus demand for food grows at a modest rate, and expansion of the labour force in the dominant rural sector can be expected to cause food production to grow at a comparable rate. Incomes and food intake per caput are low, health is generally poor, and malnutrition is extensive, but food supply and demand are roughly in balance.

While most of sub-Saharan Africa is in an early phase of development, it is importing large quantities of food at a rapidly growing rate. This is because urbanisation has proceeded at a far more rapid rate than domestic agriculture can sustain. That has been made possible by large amounts of foreign assistance and, for a few sub-Saharan African countries, by large increases in oil prices. Combined with a significant marginal product of agricultural labour, this rapid pace of urbanisation has caused agricultural production to increase more slowly and urban demand to grow more rapidly than is typical of this phase of development, particularly when land is in surplus, as it is in sub-Saharan Africa

(Mellor and Ranade forthcoming). The rates of change in this inefficient process are unsustainable without rapidly increasing foreign aid.

Phase two
Economic development begins in the second phase. Food production grows somewhat more rapidly as technological change is introduced. The rate of growth of population may slow in response to lower birth and death rates. Employment and incomes per caput grow only modestly, even though the base for more rapid growth in the future is being prepared. Food supply and demand may shift at a similar pace. Imports may be modest or even decline.

Phase three
In the third phase agricultural production increases quite rapidly, the long slow development of the institutional base having begun to bear fruit. The same process of agricultural growth has very strong linkage and multiplier effects on other parts of the economy and tends to cause rapid growth in the employment and income of the labouring class. Concurrently, other aspects of development, including endogenous capital formation and growth in other parts of the economy also accelerate the growth rate of the economy. The results are rapid growth in the income of people with high marginal propensities to spend on food. Consequently, the demand for food outpaces domestic production, even though domestic production itself may increase rapidly. The result is that imports of food grow rapidly. This importation of food is strongly reinforced by rapid growth of livestock consumption, which quickly uses up the supply of by-product feeds and thus provokes rapid growth of demand for cereals for livestock consumption.

Phase four
In phase four, the phase that high-income countries are in, population grows very slowly and, while income per caput may grow rapidly, the marginal propensity to consume food is low. Thus, demand for food increases slowly. Shifts in the supply of agricultural commodities have been institutionalised and are rapid. Thus, supply grows more rapidly than demand and there is heavy pressure either to have prices fall or to export large amounts of food. The United States entered this phase several decades ago; Europe entered it more recently. The Soviet Union seems yet to enter this phase, primarily because of continued rapid growth in demand.

THE GLOBAL BALANCE

The world has a large population in phase four and another large population moving into phase three. But most phase one countries import large amounts of food. Because the amounts of food involved are immense, particularly relative to the volume of trade in food commod-

ities, it is virtually impossible to predict whether these trends will cause food prices to rise or fall. We should, however, keep clearly in mind that this situation is new and unusual. The future certainly cannot be predicted by the experience of the last four or five years, during which the world has been in a major recession and structural realignment. In the 1950s and 1960s there were too few countries in phase three to have much impact.

How do governments plan food policy in the face of such uncertainty? Two principles stand out. First, since development requires broad participation of a country's population, the food sector, as the generally dominant sector, should be emphasised. Comparative advantage probably supports this emphasis because there is a lack of other short-run opportunities for the massive set of resources invested in agriculture. Second, caution should be used in making long-term investments in agriculture that require agricultural prices considerably higher than at present to justify them.

THE ROLE OF THE MARKET

The powerful and beneficial effect of market forces in the context of structural food imbalances should be noted. Many developing countries, despite widespread popular impression to the contrary, are developing a capacity to expand demand for food more rapidly than even an excellent record in domestic food production can match. Thus, the ability to expand employment and to have the demand for wage goods (primarily food) grow rapidly is great. The potential to expand employment would be constrained by a shortage of wage goods if these were closed economies or if they were open economies but no other countries expanded domestic production of food more rapidly than domestic demand. The rapid generation of surpluses in the developed countries favours employment-oriented growth in developing countries. It should be clear that I am talking about countries that have successfully increased employment. Those are almost inevitably countries in which an agricultural development strategy has been successful (Bachman and Paulino 1979).

These forces reduce poverty because poverty cannot be disassociated from lack of food, the primary component of consumption of the poor. If food is scarce, it becomes expensive, and as it becomes expensive it drives down the real income of the poor. Indeed, a constrained supply of food, or more properly a supply of food that is highly inelastic with respect to price, must necessarily constrain employment, because it drives up the price of wage goods, drives up the real price of labour, and substitutes capital for labour, either through capital intensive production processes in existing industries or by pushing the output mix toward more capital intensive products (Mellor 1974).

Of course, many developing countries have chosen development strategies that are highly capital intensive. India and China based their strategies on the Harrod-Domar and Fel'dman-Mahalanobis concepts,

which explicitly push development immediately in a capital-intensive direction. Import substitution strategies may begin by substituting domestic production for labour-intensive imports but they very quickly substitute domestic production for capital-intensive imports, particularly when domestic markets are limited. This process has been most marked in Latin America, where income distribution was initially highly skewed.

WHAT MARKETS CANNOT DO IN DEALING WITH FOOD IMBALANCES

Having made a case that market forces can increase food supplies and equity, we must turn to the limitations of those forces. These limitations are particularly important for equity and have important implications for growth. The problem of market limitations can properly be divided into problems of chronic food deficiencies and problems of fluctuations in food supply.

Chronic food deficiencies

In phases one and two countries can expect to suffer chronic scarcities of food. People are poor and their food supplies are inadequate. In the long run, development must move the country into phase four. Development involves major structural changes, particularly by developing scientific and technological capabilities that require massive quantities of trained people and complex institutional frameworks. Can anything be done to immediately reduce chronic food scarcity? Two measures should be noted in particular: food and employment subsidies and food aid.

Increasing the amount of food those with low food intake consume does much to increase the human capital of a country. There are clear, though not well documented, relationships between adequate diet, physical activity, physical growth, and mental energy. It seems clear that human capital is reduced by poor diets. Thus even for growth – to say nothing of Rawlsian equity – there is much to be said for improving the diets of the poor.

A reasonable way to improve the diets of the poor is to subsidise food, so that the price of food to the consumer is lower than the producer price, or lower than the world price. The problem is that poor countries can have such reductions in food prices only at great cost. They are even less able than rich countries to target food programmes on the poor because they have so few trained people. Thus, they must either have broad programmes and high marginal tax rates, or they must forego important long-term investments. Both reduce future capacity to reduce poverty.

We may distinguish between the efficiency of food subsidies in urban areas and the efficiency of employment subsidies in rural areas. People go to urban areas to find higher-paying jobs. Providing people with low-paid employment that removes them from the search for the kind of employment they came to the urban area for is not likely to work. Food subsidies seem more appropriate.

In rural areas the number of recipients is immense. There is considerable underemployment of labour, that is, labour has low productivity. The marginal propensity of the poor to spend on food is high and the return of rural infrastructure, including roads, is also high. In such circumstances subsidising employment seems an effective way to provide food to the poor.

Global food imbalances can be used to deal with the high cost of food and employment subsidies in low-income countries. Large amounts of food sold on concessionary terms can fuel food and employment subsidies. Such flows, of course, are advantageous to producers of agricultural commodities, because they, in effect, remove food from the commercial market, where demand is inelastic, and move it into markets, such as those for low-income people, where demand is highly elastic. The result is that the average price is higher than it would otherwise be (Mellor 1983). This is a powerful rationalisation for providing much more food aid than is being provided at present.

Food aid is not likely to be used effectively if recipient countries – and donors for that matter – are not interested in development led by agriculture. If agriculture is at the heart of a development strategy, then food aid can be effective in reducing global food imbalances (Mellor 1976).

Food supply fluctuations

The poor have a much more elastic demand for food than the rich – primarily because the income effect of food price change, which is such a high proportion of expenditures, is so powerful. The result is that the distribution of food is much more skewed against the poor during shortages than when supplies are average or above average. The well-to-do maintain their consumption of food when supplies are scarce and prices are high by reducing their consumption of other goods and services. That very act reduces the employment of the poor and thereby reduces their purchasing power, causing the price increases to be considerably smaller than they would be otherwise. Whether one looks at employment or prices, the poor are driven from the market for food when supplies are scarce and they make most of the shifts in consumption.

Thus, using Indian data, if there is a 10 per cent increase in food grain prices, then the bottom 40 per cent in the income distribution reduce their consumption in absolute terms by more than 10 times the reduction of the top 5 per cent (Mellor 1978). In a market economy practically all the adjustment to a food shortage is made by low income people. It is doubtful that that is either good development policy or just.

There are several notable aspects of fluctuations in food supplies. First, weather fluctuations have a tremendous effect on the poor. In India, over two decades, the proportion of the rural population falling below the defined poverty line fluctuated between 40 and 60 per cent, with two complete cycles of such fluctuations (Mellor and Desai 1985). Those huge fluctuations are a result of a large population near the defined poverty line and large fluctuations in weather.

Second, the international price environment fluctuates much more now than it used to (Valdes 1984). This is an indication that food moves across international boundaries less easily now than it did a few decades ago. This is primarily because the United States is no longer a major holder of stocks.

Third, instability in food production has increased substantially during recent decades. This is clearly documented by Peter Hazell for India, the United States, and other countries (Hazell 1984). It seems that, in large countries at least, the covariances among regions are increasing and explain much of the increase in the fluctuations. This may well be because of factors associated with modern technology. For example, practically all a country's production of a crop, as with maize in the United States, might have one parent in common, which makes the crop more vulnerable to pestilence. This is a problem that scientists are now working on, and we can expect a solution. But there is still a problem in the meantime. In a country like India, policies on fertilizer, electricity, or irrigation fluctuate from year to year, having a large effect on production as agriculture becomes more dependent on fertilizer or on electricity for small- or large-scale irrigation.

Thus the poor are tremendously affected by fluctuations in supplies, and supply fluctuations are becoming greater rather than smaller. We need to deal with these problems with a combination of national and international interventions.

The International Monetary Fund's cereal loan facility is a major innovation. It is described by Richard Adams in a recent *World Development* paper (1983). The principle behind the facility is that storage, particularly now, when real interest rates are high, is an expensive way to compensate production fluctuations. Farmers in developing countries typically store heavily after a good year and can take care of one bad year, but not always a second. This is a reflection of the high cost of storage over the long periods necessary for dealing with a sequence of bad years. The best way to solve such problems is through trade: by shipping from areas with good harvests to those with bad. The fluctuations in one country's production are vastly greater than those of the world as a whole. The IMF's cereal facility is designed to finance those flows, particularly for low-income countries that have great difficulty financing the flows themselves.

The facility needs to be improved, separating foods from other sources of fluctuations in foreign exchange availability (Ezekiel 1985). It should not be an integral part of the Compensatory Financing Facility.

Food aid can reduce fluctuations in a similar way. But past uses of food aid are not encouraging. In fact, it may be better to use the IMF cereal facility as a way of dealing with fluctuations in food aid, rather than food aid as a way of reducing use of the IMF cereal facility.

Of course, national programmes must also be relied on to ensure that food flows into rural areas when food is scarce and into urban areas when that is necessary. The national programmes needed are approximately the same as those needed to deal with chronic scarcity.

Uncertainty about global food supplies and financing is a powerful argument against a development strategy that, through emphasis on agriculture and employment, makes poor countries more dependent on uncertain weather. Thus, adding certainty of food supplies through international mechanisms can have a powerful effect on development, as well as on equity.

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